

REMARKS

The Applicants' representative conducted a telephonic interview with the Examiner on February 26, 2003 regarding the present application. During the interview, a proposed amendment to claim 7 to overcome the rejection under 35 U.S.C. §112, second paragraph, was discussed. However, no agreement was reached.

Claims 7-14 have been rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the Applicant's regard as their invention. Specifically, the rejection indicates that the term "certain criteria" is indefinite because the actual criteria discussed in the specification are not clearly defined. This rejection is respectfully traversed for the following reasons.

Under 35 U.S.C. §112, second paragraph, there are two requirements that must be met: (1) the claims must set forth the subject matter that the Applicants regard as their invention; and (2) the claims must particularly point out and distinctly define the metes and bounds of the subject matter that will be protected by the patent grant. (See M.P.E.P. §2171). It is apparent that the indication that the claims are indefinite because the criteria discussed in the specification are not clearly defined falls under neither of these requirements and therefore, the rejection is improper.

Regarding the first requirement, M.P.E.P. §2172 clearly states that a rejection based on this requirement that the claims must set forth the subject matter that the Applicants regard as their invention is appropriate only where Applicants have stated, somewhere other than in the application as filed, that the invention is something different than what is defined in the claims. It is apparent that this is not an issue in the present application, as there is no question that the Applicants are claiming what they deem is their invention.

As indicated by M.P.E.P. §2173, the main purpose of this second requirement is to ensure that the scope of the claims is clear so that the public is informed of the boundaries of what causes infringement of the patent. A second purpose is to provide a clear measure of what the Applicants regard as their invention. It is submitted that claims 7-14 satisfy the second requirement of 35 U.S.C. §112, second paragraph, as currently drafted.

The phrase "said level positioning controlling means controls the level position of said crucible based on the ascent speed adjusted by the adjustment value when certain criteria are satisfied and said level position controlling means controls the level position of said crucible based on just the ascent speed when the certain criteria are not satisfied" in claim 7 clearly indicates that the level positioning controlling means controls the level position of the crucible in different ways depending on whether certain criteria are satisfied. There is no question as to what is taking place in this phrase and the boundaries of what is claimed are clearly defined. Also, the Examiner has admitted in the Office Action dated January 13, 2003 that the term "certain criteria" in the claims is defined in the specification. Therefore, the second requirement of 35 U.S.C. §112, second paragraph, is satisfied.

Despite the fact that the two requirements of 35 U.S.C. §112, second paragraph, as detailed in the Manual of Patent Examining Procedure, have been satisfied, the Examiner states that the rejection was made because the criteria as discussed in the specification are not clearly defined. It is unclear how this indication that the criteria discussed in the specification results in a rejection under 35 U.S.C. §112, second paragraph, since 35 U.S.C. §112, second paragraph, clearly outlines requirements for what is claimed, not what is discussed in the specification. Therefore, it is apparent in the present situation that the scope of the claims is clear and that this rejection under 35 U.S.C. §112, second paragraph, is improper.

Further, it is also apparent that the four criteria detailed in the rejection as being indefinite, as not being clearly defined, are, in fact, clearly defined for one of ordinary skill in the art for the following reasons.

The first criteria indicated as being indefinite is that "the upper and lower limits of a crystal diameter are within the range of $\pm 2\text{mm}$ within a desired diameter of a main body of a single crystal." The rejection indicates that the term "desired diameter" is indefinite for not providing any actual value for the diameter of the single crystal to which the range can be applied. However, as is well known to one of ordinary skill in the art, diameters of single crystals are standardized in the industry at, for example, six inches, eight inches, and twelve inches.

Further, it is noted that paragraph [0056] of the specification details an example in which the present invention was used where a single crystal having a mean diameter of 8 inches was pulled. In addition, this example indicates in paragraph [0054] that the internal diameter of the crucible was 22 inches. Based on this disclosure and the industry standardization discussed above, it is apparent that one of ordinary skill in the art would be able to determine what is a reasonable desired diameter for the main body of the single crystal. As a result, the term “desired diameter” is definite because at least one crystal diameter is disclosed in the specification.

The second criteria indicated as being indefinite is that “the upper and lower limits of the level position are within the range of ± 5 mm to an initial position.” The rejection indicates that the term “initial position” is indefinite because the specification does not provide any actual indication of the initial position of the level position. Regarding this, it is noted that the initial position of the level position varies depending on, for example, the amount of feeding material used in each batch. However, the initial position of the level position, itself, is not what is important, but that the level position is within the range of ± 5 mm of the initial position. Therefore, once the initial position of the level position is set, the level position should be maintained within ± 5 mm of this initial position. As a result, it is apparent that there is sufficient disclosure in the specification regarding this criteria.

The third criteria indicated as being indefinite is that “the lower limit of the distance between the single crystal and the reference reflector is 22mm.” However, based on the fact that a specific minimum distance, 22mm, between the single crystal and the reference reflector is disclosed, the indication that this criteria is indefinite is without merit.

The fourth criteria stated as being indefinite is that “the upper and lower limits of the crucible rotation speed are within the range of ± 10 rpm to the crucible rotation speed at an early stage of forming the main body.” The rejection indicates that the term “crucible rotation speed at an early stage of forming the main body” is indefinite because the specification does not provide any explicit indication of the crucible rotation speed. Regarding this, it is noted that one of ordinary skill in the art would understand that this speed is dependent on the target oxygen concentration of the single crystal in a batch. Further, one of ordinary skill in the art would also

understand that the crucible rotation speed changes as the pulling operation proceeds and that the language "at an early stage of forming the main body" indicates the crucible rotation speed at a beginning of the formation of the main body.

Also, it is noted that the crucible rotation speed at the early stage of forming the main body is not what is important, as it will be varied depending on a number of factors, including the target oxygen concentration, but that the crucible rotation speed is within the range of ± 10 rpm of the crucible rotation speed at the early stage of forming the main body. Therefore, once the crucible rotation speed at the early stage of forming the main body is set, the crucible rotation speed should be maintained within ± 10 rpm of this speed. As a result, it is apparent that there is sufficient disclosure in the specification regarding this criteria.

As a result of the above discussion, withdrawal of the rejection under 35 U.S.C. §112, second paragraph, is respectfully requested.

In view of the above remarks, it is submitted that the present application is now in condition for allowance. The Examiner is invited to contact the undersigned by telephone if it is felt that there are issues remaining which must be resolved before allowance of the application.

Respectfully submitted,

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